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EXAMINER

COCKS, JOSIAH C

ART UNIT	PAPER NUMBER
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3749

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Please find below and/or attached an Office communication concerning this application or proceeding.



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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 09/716,573  
Filing Date: November 17, 2000  
Appellant(s): SUNG, KIL YONG

**MAILED**  
**NOV - 1 2004**  
**GROUP 3700**

Dmitry Kogan  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed August 03, 2004.

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**(1) *Real Party in Interest***

A statement identifying the real party in interest is contained in the brief.

**(2) *Related Appeals and Interferences***

A statement identifying the related appeals and interferences, which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

**(3) *Status of Claims***

The statement of the status of the claims contained in the brief is correct.

**(4) *Status of Amendments After Final***

No amendment after final has been filed.

**(5) *Summary of Invention***

The summary of invention contained in the brief is correct.

**(6) *Issues***

The appellant's statement of the issues in the brief is correct.

**(7) *Grouping of Claims***

Appellant states in the brief that claims 16-19 stand or fall together.

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**(8) Claims Appealed**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(9) Prior Art of Record**

5,531,592	TASI	7-1996
6,050,810	HUANG	4-2000
4,610,624	BRUHN	9-1986

**(10) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the appellant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the appellant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily

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published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

**Claims 16 and 17** are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,531,592 to Tasi ("Tasi").

Tasi discloses in Figures 1-3 a lighter substantially as described including a lighter housing (1 and 5), a fuel tank (see Fig. 1) located within the housing, a piezoelectric unit (21) for creating a spark, a trigger (22) slidably mounted in the lighter housing for activating the piezoelectric unit, the trigger having a stopper tab/flange (221), a fuel-release valve urged into a closed position, a spring mechanism (34 and 35) having a non-operational position, an operational position, a first portion (top end of 34), and a second portion (bottom end of 34), wherein the first portion locks the trigger when the spring mechanism is in the non-operational position, and the second portion opens the fuel-release valve when the spring mechanism is in the operational position (see col. 2, lines 19-44), and a safety button (36) moving the spring mechanism from the non-operational position to the operational position.

**Claims 16-19** are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,050,810 to Huang ("Huang").

Huang discloses in Figures 1-4 a lighter substantially as described in appellant's claims 16-19 including a lighter housing, a fuel tank, a piezoelectric unit, a trigger; slidably mounted, having a stopper tab, and moving along a first axis, a fuel release

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valve/plug (31) being spring loaded (32) and capable of movement along a second axis parallel to the first axis, a spring mechanism (62, 64, 50, and 70) having a non-operational position, an operational position, a first portion (70) and a second portion (50), wherein the first portion (70) locks the trigger when the spring mechanism is in the non-operational position (see Fig. 2), and the second portion (50) opens the valve/plug when the spring mechanism is in the operational position (see Fig. 4), and a safety button/knob (60) for moving the spring mechanism from the non-operational position to the operational position wherein the safety button/knob rotationally moves the spring mechanism (see pivotal movement of latch (70) by extension (64)).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claim 19** is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Tasi as applied to claim 17 above.

In regard to the limitation of claim 19 regarding a safety button for rotationally moving the spring mechanism, appellant asserts that claim 19 is not materially distinct from the scope of claim 17 because rotational motion is inherent in the movement of a spring (see page 12 of appellant's response filed 5/8/02 (paper # 5)). Further, the

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examiner notes that, broadly interpreted, a characterization of "rotationally moving" is accurately applied to the movement of the spring mechanism (35 and 34) of Tasi. When safety button (36) is slid downwardly a portion engages the spring (35). This spring then compresses, and portions of the spring engage in rotational movement to translate the force applied to the spring by the safety button (36) to the lower head portion of rod (34) in order to engage the fuel release valve of the fuel source. When the safety button is released the spring (35) functions to urge the safety button back into a non-operational position. Therefore, claim 19 is rejected under Tasi as applied to claim 17 above as the spring mechanism of Tasi (items 34 and 35) would inherently include rotational motion.

**Claim 18** is rejected under 35 U.S.C. 103(a) as being unpatentable over Tasi, as applied to claim 16 above, and further in view of U.S. Patent No. 4,610,624 to Bruhn ("Bruhn").

Tasi discloses all the limitations of claim 18 except that the fuel release valve is capable of movement on an axis parallel to the axis of movement of the trigger.

Bruhn teaches a lighter in the same field of endeavor as Tasi wherein the lighter of Bruhn has a trigger (11) and valve (7) arranged such that the trigger moves along a first axis that is parallel to the movement of the valve along a second axis.

Therefore, in regard to claim 18, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the lighter of Tasi to incorporate the trigger and valve arrangement for parallel movement as taught by Bruhn as it is well known in the art that lighter may take varied shapes (see Bruhn, col. 1, lines

9-10) such as having an elongated housing and elongated nozzle with the trigger axis and valve axis are parallel. This lighter shape, trigger arrangement, and valve arrangement allow a user to ignite a cooker, grill or open fire while maintaining the user's hand a safe distance from the flame (see Bruhn, col. 1, lines 40-44 and 61-64) and this shape ensures easy, rapid operation and an esthetic appearance (see Bruhn, col. 2, lines 14-22).

**(11) *Response to Argument***

Appellant first argues that appellant's claims recite that the fuel release valve closes when the safety button is released and that this operation creates some form of structural distinction over the prior art. However, appellant does not point to any structure in appellant's claims that is not present in the Tasi reference. Instead appellant turns to language in the specification to define how the invention functions. The examiner also notes that appellant's claims do not actually recite that the fuel release valve "closes" when the safety button is released. Instead the claims recite that the second portion [of the spring mechanism] opens the fuel-release valve when the spring mechanism is an operational position and the spring mechanism is biased into a non-operational position. The safety button is present "for moving" the spring mechanism from the non-operational to an operational position (see appellant's claims 16-19).

**Tasi Discloses the Safety Button and Spring Mechanism Claimed By Appellant**

As indicated above, the spring mechanism (34 and 35) of Tasi includes the recited structure and performs the recited functions of appellant's claims. Appellant's conclusion from the brief that "the meaning of appellant's claims is clear - the structure of the spring mechanism



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is such that the fuel-release valve can only remain open as long as the safety button is depressed by a finger” is not agreed with by the examiner. Appellant’s claims 16 and 17 read on the structure of presented in Tasi which includes all the safety button and spring mechanism structure and functions recited, namely a safety button (36) that is biased into an operational to open a valve and non-operational position by a spring mechanism (rod 34 and spring 35) wherein the safety button (36) is present “for moving” the spring mechanism between the non-operational and operational positions. There is nothing in appellant’s claims that requires that the fuel-release valve remain open only as long as the safety button is depressed *by a finger*. In Tasi, the safety button (36) is depressed by a finger to open a fuel valve and firing button (22) is then depressed to create a spark. If safety button (36) is released by the finger, the safety button is still depressed by the bottom flange (221) of the firing button (22). Release of the firing button (22) then releases safety button (36), which is biased by spring mechanism (34 and 35) to a non-operational position that functions to prevent movement of the firing button (22). Appellant’s claimed safety button and spring mechanism structure are considered to read on this structure disclosed by Tasi.

The Commercially Available Disposable Cigarette Lighter in Tasi Includes a  
Spring-Loaded Valve

Appellant also presents a new argument that was not introduced during prosecution of the application. This argument is that Tasi does not disclose that the fuel release valve is spring-loaded so as to be urged into a closed position. However, Tasi discloses that his torch is used with a conventional commercially available disposable cigarette lighter (see Tasi, col. 1, lines

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21-24 and Fig. 1). This disposable cigarette lighter includes a compartment for storing the gaseous fuel and a valve for releasing the stored fuel. In Tasi, the valve of the disposable cigarette lighter is opened when the end of rod (34) depresses a push button portion (see push button illustrated in Fig. 2 below rod 34) which in turn opens the valve nozzle to release gas from the disposable lighter fuel nozzle to be directed to the torch nozzle (31) (see Tasi, col. 2, line 66 through col. 3, line 4). It is well understood in the art that commercially available cigarette lighters of the type disclosed by Tasi and illustrated in Figs. 1 and 2 must necessarily include a spring biasing means to return the valve to a closed position once the push button is released otherwise the valve would remain open and allow a continuous flow of gaseous fuel from the valve nozzle. Appellant's recitation of that the fuel release valve is spring-loaded so as to be urged into a closed position is considered met by the Tasi reference.

#### Discussion of Material Distinction between Appellant's Claims 17 and 19

Initially it is noted that appellant has stated in the brief that claims 16-19 stand or fall together but never-the-less separately argues that claim 19 is patentable over Tasi because the spring in Tasi does not suggest utilizing rotational motion. The limitation at issue appears in appellant's claims 19 as "a safety button for rotationally moving said spring mechanism." Appellant also maintains that the scope of claim 19 is not materially distinct from the scope of claim 17 (see Appellant's Brief, page 14) but still argues that the claim 19 is not anticipated by Tasi because of the additional "for rotationally moving" limitation. If one accepts appellant's assertion that the recitation of claim 19 of "a safety button for rotationally moving said spring mechanism" is not materially distinct from the recitation of claim 17 of "a safety button for

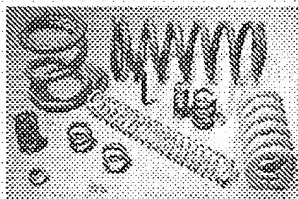
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moving said spring mechanism” then claim 19 must also be rejected over Tasi because Tasi clearly shows a safety button for moving a spring mechanism.

Alternatively, the Spring of Tasi Inherently Includes Rotational Motion

However, even assuming that the “for rotationally moving” limitation not properly considered the equivalent of the “for moving” limitation, the examiner maintains his position that rotational motion is inherent in the operation of a compression spring. The following are excerpts from an Internet website that is considered to describe the operation of a helical compression spring such as that shown in Tasi (item 25).

**From: <http://www.mech.uwa.edu.au/DANotes/springs/intro/intro.html>**



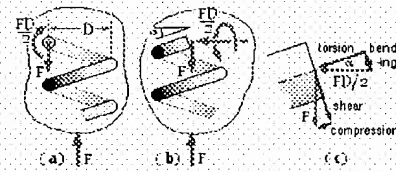
The shortcoming of most metal springs is that they rely on either bending or torsion to obtain significant deformations; the stress therefore varies throughout the material so that the material does not all contribute uniformly to energy storage. The wire of a *helical compression spring* - such as shown on the left - is loaded mainly in torsion and is therefore usually of circular cross- section. This type of spring is the most common and we shall focus on it.

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### Stresses and stiffness

The free body ( **a** ) of the lower end of a spring whose mean diameter is  $D$  :

- o embraces the known upward load  $F$  applied externally and axially to the end coil of the spring, and
- o cuts the wire transversely at a location which is remote from the irregularities associated with the end coil and where the stress resultant consists of an equilibrating force  $F$  and an equilibrating rotational moment  $FD/2$ .



The wire axis is inclined at the helix angle  $\alpha$  at the free body boundary in the side view ( **b** ) (Note that this is first angle projection). An enlarged view of the wire cut conceptually at this boundary ( **c** ) shows the force and moment triangles from which it is evident that the stress resultant on this cross-section comprises four components - a shear force ( $F \cos \alpha$ ), a compressive force ( $F \sin \alpha$ ), a torque ( $\frac{1}{2}FD \cos \alpha$ ) and a bending moment ( $\frac{1}{2}FD \sin \alpha$ ).

The above excerpts from the web-site describe that wire of a helical compression spring are loaded mainly in torsion (first paragraph section above) and the wires are subject to a equilibrating force  $F$  and an equilibrating *rotational moment*  $FD/2$  (*emphasis added*) (Stresses and stiffness section above). In a response from applicant filed May 8, 2002 (part of paper #5) applicant asserted the following:

“Rotational movement is inherent to the nature of a spring because springs inherently rotate in response to torsional forces” (See page 12 of the 5/8/2002 response).

As noted in the web-site excerpts above, the wires of a helical compression spring, such as that of Tasi, are subject to torsional forces when a vertical compression force is applied. Therefore, based on appellant’s own admission that rotational movement is inherent to the nature of a spring in response to torsional forces and what a person of ordinary skill in the art would understand from the operation of forces on a spring, the examiner considers that Tasi is properly considered to meet the limitation of applicant’s claim 19 that the safety button is “for rotationally moving the spring mechanism.”

Appellant Does Not Assert that the Bruhn is Not Combinable With Tasi

Appellant does not dispute that Bruhn teaches a lighter in which the trigger and the valve are arranged such that the trigger moves along a first axis that is parallel to the movement along a second axis or that Bruhn is properly combinable with Tasi. Appellant merely asserts that the claim 18 is patentable over the Tasi reference. As noted above, the examiner does not consider appellant's claims 16 and 17 to read over the Tasi reference alone or appellant's claim 18 to read over the Tasi reference when properly combined with the Bruhn reference.

Appellant Does Not Assert that Claims 16-19 Are Not Anticipated By Huang

Appellant does not make any arguments that appellant's claims 16-19 are not anticipated by the Huang patent (U.S. Patent No. 6,050,810). Appellant is seeking to provoke an interference with the claims of the Huang reference but is unable to include claims in the application that include all the material limitations of the patent claims. The examiner's discussion of the interference issue is addressed in detail in the Interference section below.

An Interference Can Not Be Initiated with the Huang Patent

An interference can not be initiated with the Huang Patent for two reasons. First, appellant's claims are not considered to read over the prior art of Tasi as applied to claims 16, 17, and 19 and Tasi in view of Bruhn as applied to claim 18. Therefore an interference cannot be initiated since a prerequisite for interference under 37 CFR 1.606 is that the claim be patentable to the appellant subject to judgment in the interference. Second, appellant's claims do not

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comply with 35 USC 135(b) as the claims do not include substantially the same subject matter as the patent claims as they do not include all the material limitations of the patent claims. (See MPEP §2307).

Appellant's "edge" and Huang's "hook" are distinct structures.

Huang claims a lighter having a latch (see Huang item 70) pivotally secured in a lighter housing which functions to engage a trigger to prevent the trigger from being actuated (see Huang, Fig. 1) wherein the latch has a distinct structure in the form of a hook (see Huang, item 731) to engage the trigger. Appellant claims a spring mechanism (see appellant's item 60) having a first portion in the form of a cam-lever edge for locking a trigger of a lighter (see appellant's item 81) and a second portion (see appellant's item 70) for opening a fuel-release valve. However, appellant does not claim, disclose, or suggest a hook associated with any portion of the spring mechanism. The trigger locking latch of Huang and the trigger locking mechanism of appellant function in a distinct manner from one another. Huang's hook (see Huang, item 731) is positioned to allow latch (see Huang, item 70) to lock the trigger such that the latch is placed in **tension** to prevent trigger movement (see Huang, Fig. 2) while appellant's edge (see appellant's item 81) engages the trigger (see appellant's Fig. 1 showing first portion 80 engaging stopper portion 110 mounted on the trigger) such that the first portion is placed in **compression**. Therefore, the hook structure of Huang is critical to his claimed means of preventing trigger actuation, whereas a person of ordinary skill in the art would not be prompted to include such a hook in any portion of appellant's trigger locking mechanism.

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Huang is claiming direct engagement of the knob (60) with the plug (31) and latch (70)

Huang claims in claims 1 and 6 that a plug (see Huang, item 31) engaging a valve seat (see Huang, item 38) and a knob (see Huang, item 60) wherein the knob is slidably received in a housing and both engages the plug for disengaging the plug from the valve seat to release a gas flow and engages the latch (see Huang, item 70) for releasing the hook to allow trigger movement. The examiner regards this language in Huang to recite direct engagement of the knob (31) with the plug (31) and the latch (70).

While appellant also claims a knob/safety button (see appellant's item 120) and plug/valve (see appellant's item 31), appellant's knob/safety button only engages the spring mechanism to move the spring mechanism into an operational and non-operational position whereby the second portion (see appellant's item 70) of the spring mechanism opens the fuel release valve and does not claim or disclose that the knob/safety button engages the plug/valve.

Appellant's arguments on pages 18 and 19 of the Brief that it would be obvious to one skilled in the art to interchange the direct engagement means of the valve/plug disclosed in Huang with the engagement means of the spring mechanism disclosed by appellant, are not persuasive. There is no proper motivation for this proposed substitution.

Therefore, Huang's claimed means for releasing the trigger and allowing a gas flow are both materially distinct from that claimed by appellant. Accordingly, an interference cannot be initiated based upon these claims.

For the above reasons, it is believed that the rejections should be sustained.

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Respectfully submitted,




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Art Unit 3749

jcc

October 26, 2004

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